Magnesium Sulfate

1402

Used in the treatment for OB patients that are suffering from pre-eclampsia and/or eclampsia and to stop labor.

Transport Preparation

1. Get report from the staff with respect to condition and treatment of the patient.
2. Obtain the order for the infusion.
3. Perform a complete history (including OB history) and physical, including deep tendon reflexes.
4. Provide continuous cardiac monitoring.
5. Infuse via IV pump and confirm the rate of infusion in the written orders.
6. If available, ask the transferring facility for a magnesium level and note in the report.
7. If not in your stock of drugs, obtain calcium chloride from the transferring facility.

Transport Care/Management

1. Monitor vital signs, including deep tendon reflexes every 15 minutes.
2. Assess fetal heart tones every 30 minutes.
3. Continuous cardiac monitoring.
4. Adjust the magnesium infusion only on the order of the physician.
5. Assess for signs of magnesium toxicity including signs of:
    1. Loss or decreased deep tendon reflexes
    2. Respiratory depression and/or arrest.
    3. Hypotension and tachycardia.
    4. Confusion.
    5. Decrease in urine output (minimum 30cc/hr.)
6. Discontinue the infusion immediately for signs of magnesium toxicity.
7. Contact medical control ASAP.
8. Administer Calcium Chloride 1 gram over 3 minutes for signs of toxicity.

Key Points/Considerations

1. Magnesium has been shown not to pose a threat to the fetus.
2. Therapeutic magnesium levels are 4-8 mg/dl. Reflexes disappear at 8-10mg/dL, respiratory depression occurs at 10-15mg/dL, and cardiac conduction problems occur at levels above 15mg/dl.
3. In the event of a delivery, assess and monitor the neonate for magnesium toxicity.

Nitroglycerin (Tridil)

1403

Used in the management of angina, myocardial infarction, congestive heart failure and hypertension. Mechanism of action is vasodilation.

Transport Preparation

1. Obtain a report including patient treatment and status.
2. Receive a copy of the orders for the medication from the transferring physician.
3. Tridil must be infused via a pump during transport.
4. Since there are several different concentrations of Tridil available, document concentration that the transferring hospital is using.
5. Infuse normal saline or lactated ringer's at KVO rate along with Tridil.

Transport Care/Management

1. Provide continuous cardiac monitoring.
2. Assess patient and vital signs every 30 minutes and as needed.
3. If ordered, titrate the Tridil infusion based on patient symptoms and vital signs.
4. Hypotension may develop in a patient receiving Tridil. If this occurs, decrease or stop the infusion and administer a fluid challenge as long as the patient IS NOT in CHF/pulmonary edema.
5. If the patient is in CHF/PE, contact medical control about treatment with a vasopressor.

Key Points/Considerations

1. There is not a "set" dose of Tridil to administer, as it is case dependent. The range is from 1mcg/min to 200mcg/min.
2. Be familiar with the concentration of Tridil that the transferring facility uses and how to change the pump settings based on the concentration. The most common concentrations are 100mcg/cc and 200mcg/cc.
3. A common side effect of Tridil is headache.

Heparin

1404

Used as an anticoagulant for management of several medical conditions.

Transport Preparation

1. Receive a report from the transferring facility.
2. Confirm the rate and concentration of infusion with that of the orders.
3. Complete an assessment of the patient.
4. Usage of a pump is required for transport.

Transport Care/Management

1. Provide continuous cardiac monitoring.
2. Assess the patient for areas of expanding eccymosis, tachycardia, or active bleeding. Stop the infusion and contact medical control immediately.
3. Adjust the rate of infusion only by written order of the transferring physician. Exceptions are listed in (2) above.

Key Points/Considerations

1. Heparin is infused based on units per hour (u/hr), and is usually weight based.
2. Be familiar with the concentration of heparin the referring facility is using. Common concentrations are 40u/cc, 50u/cc and 100u/cc.

Anti-platelet GB IIb/IIIa Inhibitors
Integrilin/Aggrastat

1405

1. Anti-platelet GB II b/ IIIa inhibitors are used in cardiac patients to reversibly inhibit platelet aggregation by preventing the binding of fibrinogen, von Wilebrand factor, and other adhesive ligands to GB II b/IIIa.
2. The effects of the medication are dose dependent.

Transport Preparation

1. Complete a full assessment, pay attention to any signs of bleeding or bruising.
2. Confirm the order with that of the pump settings.
3. Transport with a pump in use.

Transport Care/Management

1. Reassess patient every 30 minutes, including complete set of vital signs.
2. Look for any signs of bleeding or expanding ecchymosis. If there is any bleeding, first attempt direct pressure. If bleeding doesn't stop, discontinue the infusion (also stop heparin if being administered).

Key Points/Considerations

Specifics for delivery:

1. Do not administer integrilin and aggrastat at the same time.

INTEGRILIN:

1. May be administered in the same line as atropine, dobutamine, heparin, lidocaine, versed, morphine, tridil and verapamil. Also compatible with normal saline or D5NS.
2. Administered per the patient's weight in kilograms.
3. DO NOT administer in the same line as Lasix.
4. Transport at set rate, per physician's order.

AGGRASTAT:

1. Can only be administered in the same line as heparin. Compatible with Normal Saline and D5W.
2. Administered per the patient's weight in kilograms.
3. Transport at set rate, per physician's orders.
4. Do not add medication or withdraw solution directly from the bag.

I.V. Antibiotics

1406

Used in the treatment of infectious diseases from a bacterial source.
May either continue and/or start an infusion during transport.

Transport Preparation

1. Obtain report and patient's condition from the transferring facility.
2. Receive orders from the transferring physician.
3. Complete an assessment, including patient's allergy status.
4. If starting antibiotic therapy during transport, obtain the needed drug and supplies from the hospital and a list of adverse reactions.
5. Antibiotics may be administered via a pump or dial-a-flow.

Transport Care/Management

1. Reassess patient as needed during the transport. Pay attention to any signs/symptoms of adverse reaction.
2. If the patient develops an adverse reaction to the antibiotic, stop the infusion immediately and treat per the allergic reaction protocol (see below).
3. Contact medical control and advise of the situation and the progress of treatment.
4. Continue to the receiving facility or divert, depending on advice from the transferring facility.

Key Points/Considerations

1. Most antibiotics are administered in 30-60 minutes, although this may be modified by physician order.
2. Check compatibility of drugs if the antibiotic is to be administered with other medications.
3. Common signs and symptoms of an allergic reaction include; rash, itching, flushing, shortness of breath, stridor, coughing/sneezing, diffuse wheezing, airway edema, stomach cramping, tachycardia, and anxiety.

Potassium Chloride

1407

Used as replacement in hypokalemia arising either from metabolic and/or medication usage.

Transport Preparation

1. Obtain report from the transferring facility.
2. Complete a full assessment.
3. Confirm the pump settings and amount of KCI being infused with that of the orders.

Transport Care/Management

1. Provide continuous cardiac monitoring.
2. Reassess the patient every 30 minutes.
3. Watch for signs of toxicity including:
    a. muscle paralysis
    b. tented T-waves
    c. prolonged QT interval
    d. ventricular and nodal dysrhythmias
    e. asystole and/or v-fib
4. If the patient develops toxicity administer Sodium Bicarbonate 50meq IVP and contact medical control as soon as possible.

Key Points/Considerations

1. Always administer via IV piggyback.
2. **NEVER ADMINISTER IV PUSH!!! THIS WILL RESULT IN CARDIAC ARREST!!!**

Insulin

1408

Insulin is used in the management of Diabetic Ketoacidosis (DKA).

Transport Preparation

1. Obtain a report from the transferring facility, including a serum glucose.
2. Complete a full assessment, and perform an accu-check.
3. Insulin must be infused via pump at all times. Confirm the rate with that of the order.
4. Obtain a written order for the infusion during transport.

Transport Care/Management

1. Reassess patient every 30 minutes with complete vital signs.
2. Provide continuous cardiac monitoring.
3. Observe for signs of hypoglycemia. Perform glucose checks every hour, and treat appropriately.
4. Contact medical control and advise of situation.

Key Points/Considerations

1. Concentration of insulin drip shall be 1unit/cc.
2. Use only Humulin R insulin mixed in normal saline.
3. Glucose checks should be performed using a glucometer. Dextrose sticks are not accurate.
4. Signs and symptoms of hypoglycemia include; mental status changes, mood changes, pale skin, diaphoresis, tachycardia, headache, seizure, and coma.

Total Parenteral Nutrition/Partial Parenteral Nutrition
1409

Used in various healthcare settings and may be used at home.
Used for patients who are not able to maintain enteral nutrition for various reasons, including:

a. chronic vomiting
b. cancer patients
c. CVA
d. anorexia
e. gastrointestinal fistula
f. IBS
g. intestinal resection
i. bowel obstruction
j. burn patients
k. ventilator dependent patients

Transport Preparation

1. Obtain a report from the transferring facility.
2. Complete a full assessment, including serum glucose level.
3. TPN/PPN must be infused via pump. Confirm the pump settings with the physician orders.
4. If the physician authorizes a rate change during transport, obtain a written order before leaving the hospital.
5. Check the line and make sure it has a 0.2 micron filter.

Transport Care/Management

1. Never stop the infusion abruptly, as this can cause profound hypoglycemia.
2. Reassess the patient every 30 minutes.
3. Only change the flow if ordered by the physician.
4. Observe for the following signs of complications:
    a. infection or infiltration around the site.
    b. fever
    c. fluid overload
    d. air emboli
    e. hypoglycemia
5. If signs are found, contact medical control immediately.
6. Perform glucose checks every hour with a glucometer and treat accordingly.

Key Points/Considerations

1. TPN is a D50W based solution and must be infused through a central line.
2. PPN is a D10W based solution and may be infused through a peripheral or central line.
3. Both solutions contain various nutrients and some may contain medications including insulin.

Blood

1410

Used to restore blood volume and to increase oxygen carrying capacity, clotting factors and iron delivery.

Transport Preparation

1. There must be at least two paramedics to accompany the patient if there are to be additional units of blood administered. This is to allow for proper identification of blood unit, patient and compatibility prior to transfusion.
2. Obtain a complete report on the patient's condition.
3. Ensure the blood you have is for the correct patient who has the correct blood type, and all stock numbers on the patient's armband, unit of blood, and paperwork from the laboratory match.
4. Get a written order from the physician as to the number of units to administer and the rate of administration.
5. If the patient does not have at least two IV access sites, insert large bore (14-18ga) angiocaths as appropriate and infuse normal saline using blood tubing. NEVER administer blood with anything other than normal saline (0.9% NaCl).

Transport Care/Management

1. Always administer blood products via blood tubing and IV pump.
2. Provide a reassessment every 30 minutes, including a temperature, and document.
3. If more then one unit of blood is to be administered, verify that numbers on the patient's armband, the blood and the sheet from the lab match. If the numbers don't match, DO NOT administer the blood.
4. DO NOT use any blood that isn't bright red.
5. Between units of blood, flush the line with normal saline and change tubing before hanging a new unit.
6. Place all units of blood in a bio-hazard bag and deliver all used bags to the receiving facility.
7. If the patient develops an increase in temperature greater than two (2) degrees higher than the original temperature, stop the infusion, remove the blood tubing, hang new tubing and flush with normal saline.
8. If there is a reaction, contact medical control for orders and keep the bag of blood and tubing, which MUST be returned to the originating laboratory for analysis.
9. Observe the patient for signs of fluid overload, especially in infants, children and the elderly. If this occurs, contact medical control for orders.

Key Points/Considerations

1. Febrile reactions are classified as an increase in temperature of more than two (2) degrees and the patient must have been afebrile for the previous 24 hours.
2. Transfusion reaction signs/symptoms include: flushing, respiratory distress, hyperventilation, flank pain, chest pain.

Solu-Medrol

1411

Used in this protocol for the management of spinal cord injuries.

Transport Preparation

1. Obtain a report from the transferring facility, including the level of spinal cord injury and the neurologic deficit on examination.
2. Complete a full assessment of the patient, including neurological assessment and level of neurologic deficit.
3. Ensure the patient is properly immobilized.
4. If the physician wants the dosage of solu-medrol to be changed during transport, get a written order prior to transport.
5. Solu-Medrol must be administered via IV pump. Confirm the pump settings with the written orders.
6. Verify that there are or establish at least two IV access sites.

Transport Care/Management

1. Ensure that the patient is properly immobilized.
2. Reassess the patient every 30 minutes, including a neurological exam.
3. Evaluate signs of fluid overload and treat accordingly. Contact medical control as needed.
4. Evaluate for signs of an adverse reaction and treat according to protocol.
5. If there is a high cervical spine injury, monitor respirations and pulse oximetry closely, as there may be interruption of the respiratory control center. Intubate as needed, maintain in line C-spine immobilization during tracheal intubation.
6. Provide a smooth transport!

Key Points/Considerations

1. Some pharmacies place solu-medrol in glass bottles, which will be susceptible to breaking.

Dilantin

1412

Used in the treatment of seizure activity, including status epilepticus.

Transport Preparation

1. Obtain a complete report from the transferring facility and obtain orders for treatment of "break-through" seizures from the physician.
2. Complete a full assessment of the patient.
3. Dilantin can not be administered in fluid containing dextrose.
4. Confirm pump settings with the written order.

Transport Care/Management

1. Provide continuous cardiac monitoring while administering Dilantin.
2. Maintain oxygen saturation (SaO2) of at least 95%. Administer oxygen/ventilate as needed.
3. Reassess every 30 minutes and as needed.
4. Treat any "break-through" seizures as needed.
5. Watch for cardiovascular side effects of Dilantin including: hypotension, arrhythmias, and heart blocks. These result from rapid administration. **STOP THE INFUSION** and contact medical control for treatment options.

Key Points/Considerations

1. Patients receiving Dilantin may have added drowsiness, insomnia, confusion, tremors, and headaches. If these occur, contact medical control for options of treatment, if needed.
2. The infusion rate of 50mg/min should not be exceeded.
3. If the infusion is completed during transport, flush the line with Normal Saline to avoid irritation of the insertion site.

Cardizem

1413

Used in the management of Atrial Fibrillation/Atrial Flutter with a rapid ventricular response, supraventricular tachycardia and sometimes angina.

Transport Preparation

1. Obtain a complete report from the transferring facility. If the Cardizem infusion is to be titrated during transport, obtain a written order from the physician.
2. Complete a full assessment of the patient.
3. Confirm the pump setting with the written orders.
4. If there is a chance the infusion will run out during transport and you don't carry Cardizem, obtain the needed amount from the hospital.
5. The standard dose is 125mg of Cardizem in 100cc Normal Saline or D5W. This has a 1mg/1cc concentration.

Transport Care/Management

1. Provide continuous cardiac monitoring and reassess the patient every 30 minutes.
2. Watch for side effects of Cardizem such as: nausea, vomiting, dizziness, headaches, bradycardia, heart blocks, hypotension, and asystole. If any of these occur, especially the cardiac effects, discontinue the infusion, treat according to protocol (sect 504 and 505) and contact medical control as soon as possible.
3. Transport to the closest medical facility if arrest or serious side effects occur.
4. Changing the rate of infusion requires physician order.

Key Points/Considerations

Cardizem is incompatible with: valium, lasix, heparin, insulin, sodium bicarbonate, and aminophylline.

Levophed

1414

Used in the treatment of neurogenic shock, hypotension due to tricylclic antidepressant overdoses, and hypotension with SBP < 70mmHg NOT RELATED TO HYPOVOLEMIA.

Transport Preparation

1. Obtain a report from the transferring facility.
2. Complete a full assessment, including neurological exam if in neurogenic shock.
3. If there is neurological involvement, full spinal immobilization is required.
4. Verify or establish at least two IV large bore access sites, using Normal Saline or Lactated Ringer's.
5. Confirm pump settings with the orders.
6. If extra medication is needed and it is not carried in the service's stock, obtain some from the facility.

Transport Care/Management

1. Reassess every 30 minutes, including vital signs, and neurological exam.
2. Titrate levophed drip only by the physician order.
3. Use continuous cardiac monitoring during transport.
4. Administer levophed through a large vein, avoid the smaller veins in the hand/foot.

Key Points/Considerations

1. Levophed is mixed to achieve a 16mcg/cc concentration. Use either 4mg/250cc or 8mg/500cc of D5W.
2. Dosage range is 0.5-30mcg/min IV infusion only.